REMARKS

Applicants note with appreciation that, in the Office Action of October 29, 2007, claims 4 and 5 were objected to as being dependent upon a rejected base claim,
5 but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. However, claims 1-3 and 6-9 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over European Patent Application No. EP 0971485 A1 (hereinafter "Gotze et al."). In addition, claim 10 was rejected under 35 U.S.C. 103(a) as allegedly being
10 unpatentable over Gotze et al. in view of U.S. Patent No. 6,370,129 (hereinafter "Huang").

In response, Applicants have amended claims 1-10 to more clearly distinguish the claimed invention form the cited references and/or to make minor corrections or
15 changes. As amended, Applicants respectfully assert that each limitation of the independent claims 1 and 9 is not disclosed in the cited reference of Gotze et al., as explained below. Thus, the amended independent claims 1 and 9 are not obvious in view of the cited reference of Gotze et al. In view of the claim amendments and the following remarks, Applicants respectfully request that the pending claims 1-10 be
20 allowed.

I. Patentability of Amended Independent Claims 1 and 9

The amended independent claim 1 recites "*obtaining a channel correlation*
25 *matrix R, taking one part from the channel correlation matrix R and getting a partial correlation matrix R_P of the channel correlation matrix R*" and "*performing an inversion operation to the partial correlation matrix R_P, and then obtaining a matrix $V^{(m)}$ using an inverse version of the partial correlation matrix R_P,*" which are not disclosed in the cited reference of Gotze et al. Thus, the independent claim 1 is not
30 obvious in view of the cited reference of Gotze et al.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references

themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion

5   to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The cited reference of Gotze et al. discloses a radio communications receiver

10   that generates a factorized matrix R from a correlation matrix S, as described in paragraph [0017]. The Office Action has apparently equated the factorized matrix R described in Gotze et al. to the claimed "*partial correlation matrix R_P.*" However, as amended, the independent claim 1 now recites "*obtaining a channel correlation matrix R, taking one part from the channel correlation matrix R and getting a partial*

15   *correlation matrix R_P of the channel correlation matrix R.*" In contrast, the factorized matrix R described in Gotze et al. is not a partial matrix of the correlation matrix S, which is the matrix used to generate the factorized matrix R. This is supported by an example described in Gotze et al. in paragraphs [0040]-[0045]. In paragraph [0040] of Gotze et al., an example of a correction matrix S is shown. In paragraph [0045] of

20   Gotze et al., the factorized matrix R for the correction matrix S is shown. Clearly, the factorized matrix R in paragraph [0045] is not a partial matrix of the correction matrix S in paragraph [0040]. Thus, the cited reference of Gotze et al. does not disclose "*obtaining a channel correlation matrix R, taking one part from the channel correlation matrix R and getting a partial correlation matrix R_P of the channel*

25   *correlation matrix R,*" as recited in the amended independent claim 1.

In addition, the cited reference of Gotze et al. does not disclose "*performing an inversion operation to the partial correlation matrix R_P, and then obtaining a matrix $V^{(m)}$ using an inverse version of the partial correlation matrix R_P,*" as recited

30   in the amended independent claim 1. The cited reference of Gotze et al. does mention in paragraph [0009] "inverting either the correlation matrix or the factor matrix or both." However, the inverted matrix is not described as being used to obtain another matrix, other than the correlation matrix and the factor (factorized) matrix. Thus, the

cited reference of Gotze et al. also does not disclose "*performing an inversion operation to the partial correlation matrix $\boldsymbol{R}_P$, and then obtaining a matrix $\boldsymbol{V}^{(m)}$ using an inverse version of the partial correlation matrix $\boldsymbol{R}_P$,*" as recited in the amended independent claim 1.

Since the cited reference of Gotze et al. does not teach all the claim limitations, the amended independent claim 1 is not obvious in view of the cited reference of Gotze et al. As such, Applicants respectfully request that the amended independent claim 1 be allowed.

The above remarks are also applicable to the amended independent claim 9, which recites limitations similar to those of the amended independent claim 1. Thus, Applicants respectfully assert that the amended independent claim 9 is also not obvious in view of the cited reference of Gotze et al., and request that this independent claim be allowed as well.

II. Patentability of Dependent Claims 2-8 and 10

Each of the dependent claims 2-8 and 10 depends on one of the amended independent claims 1 and 9. As such, these dependent claims include all the limitations of their respective base claims. Therefore, Applicants submit that these dependent claims are allowable for at least the same reasons as their respective base claims.

As an example, the dependent claim 2 recites in part "*wherein said partial correlation matrix $\boldsymbol{R}_P = \{r_{i,j}\}$, $i,j = 1 \ldots (2P + 1)K$, where said partial correlation matrix $\boldsymbol{R}_P$ is a submatrix of the channel correlation matrix R on diagonal,*" which is not disclosed in the cited reference of Gotze et al. The factorized matrix R described in Gotze et al. is not defined by "$\{r_{i,j}\}, i,j = 1 \ldots (2P + 1)K$" and is not "a submatrix" of the correlation matrix S. Thus, the dependent claim 2 is not obvious in view of the cited reference of Gotze et al.

Applicants respectfully request reconsideration of the claims in view of the remarks made herein. A notice of allowance is earnestly solicited.

Respectfully submitted,

5   Liang et al.

                                          By: /thomas h. ham/
       Date: January 29, 2008   Thomas H. Ham
                                               Registration No. 43,654
10   Telephone: (925) 249-1300